

## Laws and Guidance for Testimony on S.66 Motor Vehicle Noise Bill

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### 1. VT Current Law and Regulations on Motor Vehicle Noise

A. Vermont Periodic Inspection Manual (VPIM) (2019):

#### **MOTORCYCLE/MOTOR-DRIVEN CYCLE/AUTOCYCLE**

EXHAUST SYSTEM [p. 69-70]

Motorcycles, motor-driven cycles, and autocycles must be equipped with an exhaust system, where applicable, incorporating a muffler or other mechanical device for the purpose of reducing engine noise.

Procedure: Examine the complete exhaust system, paying particular attention to rusted and corroded parts and surfaces.

#### **Reject vehicle if:**

1. The muffler or exhaust pipe has breaks, open seams, or perforations. All joints must be tight, and the entire system must be firmly attached to the vehicle.
2. Any patch or repair jacket is used other than one welded securely and completely around the entire perimeter.
3. Any component is not securely fastened or is located, so it interferes with the operation of the motor-driven cycle.
4. Shielding is not present to prevent inadvertent bodily contact with any part of the exhaust system during normal operation.
5. Any muffler (or catalytic converter, if so equipped) is present that is not original factory installed equipment, not equivalent replacement equipment, or not designed for highway use.
6. The muffler does not have baffles or baffles have been removed.
7. Any changes, modifications, alterations, deletions, or adjustments have been made to the exhaust system that would cause any exhaust system to generate an unreasonable sound level.

#### **Advise owner if:**

1. The exhaust system has cutout or bypass in violation of 40 C.F.R. 205.166.

#### **PLEASURE CAR AND LIGHT TRUCK**

EXHAUST SYSTEM [p. 42-43]

Procedure: Examine vehicle exhaust system and components, including piping leading from the cylinder head to the exhaust end of the tailpipe.

#### **Reject vehicle if:**

1. The vehicle has no muffler.
2. There are nonmanufactured holes or leaks in the exhaust system from cylinder head to the tailpipe.

**Note:** Repairs with equal or greater material than that commonly used in the manufacturing of exhaust systems are permitted.

3. Components of the system are not securely fastened.
4. Any heat shield connected to the body (floor pan) is missing.
5. Any component of the system passes through the passenger compartment.
6. The exhaust system does not discharge exhaust fumes beyond the passenger compartment of the vehicle.

**Advise customer if:**

1. The tailpipe end is pinched, plugged, or crushed, which would restrict the exhaust flow.
2. If any heat shield connected to the exhaust system (not to the body/floor pan) is missing.
3. There is a muffler, muffler cutout, or similar device that allows excessive noise

**HEAVY TRUCK AND BUS**

[No rules relevant to noise]

B. VT Statutes:

23 V.S.A. § 1221

**§ 1221. Condition of vehicle**

A motor vehicle, operated on any highway, shall be in good mechanical condition and shall be properly equipped. [<https://legislature.vermont.gov/statutes/section/23/013/01221>]

23 V.S.A. § 1222

**§ 1222. Inspection of registered vehicles:**

[See <https://legislature.vermont.gov/statutes/section/23/013/01222>]

**2. Sound level limits: health and environmental guidance**

A. HUD noise standards are required to be followed for construction projects supported by US Department of Housing and Urban Development; used here as example of potential appropriate noise limits

[<https://www.hudexchange.info/programs/environmental-review/noise-abatement-and-control>]:

*HUD's noise standards may be found in 24 CFR Part 51, Subpart B. For proposed new construction in high noise areas, the project must incorporate noise mitigation features. Consideration of noise applies to the acquisition of undeveloped land and existing development as well.*

*All sites whose environmental or community noise exposure exceeds the day night average sound level (DNL) of 65 decibels (dB) are considered noise-impacted areas. For new construction that is proposed in high noise areas, grantees shall incorporate noise attenuation features to the extent required by HUD environmental criteria and standards contained in Subpart B (Noise Abatement and Control) of 24 CFR Part 51. The interior standard is 45 dB.*

*The "Normally Unacceptable" noise zone includes community noise levels from above 65 decibels to 75 decibels. Approvals in this noise zone require a minimum of 5 dB additional sound attenuation for buildings having noise-sensitive uses if the day-night average sound level is greater than 65 dB but does not exceed 70 dB, or a minimum of 10 decibels of additional sound attenuation if the day-night average sound level is greater than 70 dB but does not exceed 75 dB.*

*Locations with day-night average noise levels above 75 dB have "Unacceptable" noise exposure. For new construction, noise attenuation measures in these locations require the approval of the Assistant Secretary for Community Planning and Development (for projects reviewed under Part 50) or the Responsible Entity's Certifying Officer (for projects reviewed under Part 58). The acceptance of such locations normally requires an environmental impact statement. In "Unacceptable" noise zones, HUD strongly encourages conversion of noise-exposed sites to land uses compatible with the high noise levels.*

B. From [Report on Excessive Motor Vehicle Noise](#) [p.1-4 – 1-6]:

*Environmental noise, including noise from vehicles, aircraft, and other anthropogenic sound sources, is an important factor for quality of life. The Federal Highway Administration notes that, "studies have shown that some of the most pervasive sources of noise in our environment today are those associated with transportation. Traffic noise tends to be a dominant noise source in our urban as well as rural environment." Long-term exposure to high sound levels has been shown to increase stress levels and reduce health in exposed persons.*

*The Environmental Protection Agency (EPA) developed guidelines for environmental sound levels in their 1974 document "Information on Levels of Environmental Noise Requisite to Protect Public Health and Excessive Vehicle Noise Report Welfare With an Adequate Margin of Safety". The EPA recommends a maximum Ldn of 55 dBA for outdoor residential areas. The Ldn is a 24-hour average sound level with a 10-decibel penalty applied to sounds generated during the nighttime hours of 10:00 pm to 7:00 am.*

*The American National Standards Institute (ANSI) has a multi-part standard regarding environmental noise. ANSI/ASA S12.9-2007/Part 5 (R2017) assesses the "compatibility" of land use types with the outdoor noise environment based on the Ldn. An Ldn of 45 to 55 dBA is considered compatible with single-family, urban/suburban residential areas with extensive outdoor use, and an Ldn of 55 to 57.5 dBA is considered marginally compatible.*

*The EPA and ANSI environmental noise guidance has been developed as a way to quantify the effects of long-term environmental noise and uses 24-hour average sound levels as the metric for evaluation. Many of the excessive vehicle noise complaints are not related to long-term average traffic sound levels, but rather focus on a few short-term loud events from a few noisy vehicles. The SEL is a better sound level metric for evaluating disturbances from short-term transient noise sources.*

*... For example, three percent of people would likely be awakened at an indoor SEL of 60 dBA, which is equivalent to an outdoor SEL of 75 dBA, assuming 15 dBA noise level reduction from outdoor to indoor with windows open.*